

Claims

- [c1] An armrest for a vehicle passenger compartment comprising:
a collapsible frame, wherein the collapsible frame is deflectable in at least one direction upon a forcible impact received by the armrest; and
a cover positioned over the collapsible frame.
- [c2] The armrest of claim 1 and further comprising a recess located within the armrest adjacent to the collapsible frame, wherein the recess provides an area for deflection of the collapsible frame upon receipt of an impact force.
- [c3] The armrest of claim 2 wherein the collapsible frame comprises:
a first frame member adapted to be mounted to a support member in the vehicle passenger compartment to mount the armrest to the support member; and
a second frame member mounted to the first frame member by a moveable mounting.
- [c4] The armrest of claim 3 wherein the impact force required to move the second frame is less than that required if the second frame were permanently mounted to the first

frame.

- [c5] The armrest of claim 3 wherein the impact force required to move the second frame is less than that able to cause injury to a bodily region of an occupant that collides with the armrest.
- [c6] The armrest of claim 3 wherein the moveable mounting comprises a mounting adapted to permit movement of the second frame relative to the first frame upon receipt of the impact force to the armrest.
- [c7] The armrest of claim 6 wherein the moveable mounting comprises at least one pin on one of the first frame and the second frame received by at least one aperture on the other of the first frame and the second frame corresponding to each of the at least one pin on the one of the first frame and the second frame.
- [c8] The armrest of claim 7 wherein the at least one pin is sheared off by the at least one corresponding aperture during relative movement of the second frame with respect to the first frame.
- [c9] The armrest of claim 8 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.

- [c10] The armrest of claim 6 wherein the movable mounting comprises at least one edge on one of the first frame and the second frame received behind at least one ridge on the other of the first frame and the second frame corresponding to each of the at least one edge on the one of the first frame and the second frame.
- [c11] The armrest of claim 10 wherein the at least one edge cams over the at least one ridge during relative movement of the second frame with respect to the first frame.
- [c12] The armrest of claim 11 wherein the at least one edge has one of a semi-circular and triangular profile.
- [c13] The armrest of claim 6 and further comprising a core material located between the cover and the collapsible frame to provide a tactile feel for the armrest.
- [c14] The armrest of claim 13 wherein the core is composed of a foam material.
- [c15] The armrest of claim 14 wherein the foam material is semi-rigid.
- [c16] The armrest of claim 15 wherein the cover is composed of a flexible material.
- [c17] The armrest of claim 16 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.

- [c18] The armrest of claim 17 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c19] The armrest of claim 18 wherein an impact force received against the cover deflects at least a portion of the core against the collapsible frame to cause deflection of the collapsible frame.
- [c20] The armrest of claim 19 wherein the impact force required to move the second frame is less than that required if the second frame were permanently mounted to the first frame.
- [c21] The armrest of claim 19 wherein the impact force required to move the second frame is less than that able to cause injury to a bodily region of an occupant that collides with the armrest.
- [c22] The armrest of claim 1 and further comprising a core material located between the cover and the collapsible frame to provide a tactile feel for the armrest.
- [c23] The armrest of claim 22 wherein the core is composed of a foam material.
- [c24] The armrest of claim 23 wherein the foam material is semi-rigid.

- [c25] The armrest of claim 22 wherein an impact force received against the cover deflects at least a portion of the core against the collapsible frame to cause deflection of the collapsible frame.
- [c26] The armrest of claim 1 wherein the cover is composed of a flexible material.
- [c27] The armrest of claim 1 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.
- [c28] The armrest of claim 1 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c29] An armrest for a vehicle passenger compartment comprising:
a substrate adapted to be fixedly mounting to a support panel in the vehicle passenger compartment;
a cover mounted over the substrate;
a core disposed between at least a portion of the substrate and the cover to provide a tactile feel to the armrest; and
a deflectable member retained against the substrate, wherein the deflectable member can overcome its retention against the substrate upon receipt of a suitably large impact force and move with respect to the sub-

strate.

- [c30] The armrest of claim 29 and further comprising a recess adjacent to the substrate, wherein the deflectable member can move into an area of the recess upon receipt of the impact force.
- [c31] The armrest of claim 30 wherein the impact force deflects at least a portion of the core against the deflectable member to cause movement of the deflectable member.
- [c32] The armrest of claim 31 wherein the retention of the deflectable member against the substrate is performed without separate fasteners.
- [c33] The armrest of claim 32 and further comprising a moveable mounting adapted to permit movement of the deflectable member relative to the substrate upon receipt of the impact force to the armrest, wherein the retention of the deflectable member is performed by the moveable mounting.
- [c34] The armrest of claim 33 wherein the moveable mounting comprises at least one pin on one of the substrate and the deflectable member received by at least one aperture on the other of the substrate and the deflectable member corresponding to each of the at least one pin on the

one of the substrate and the deflectable member.

- [c35] The armrest of claim 34 wherein the at least one pin is sheared off by the at least one corresponding aperture when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.
- [c36] The armrest of claim 35 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.
- [c37] The armrest of claim 33 wherein the movable mounting comprises at least one edge on one of the deflectable member and the substrate received behind at least one ridge on the other of the deflectable member and the substrate corresponding to each of the at least one edge on the one of the deflectable member and the substrate.
- [c38] The armrest of claim 37 wherein the at least one edge cams over the at least one ridge when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.
- [c39] The armrest of claim 38 wherein the at least one edge has one of a semi-circular and triangular profile.
- [c40] The armrest of claim 39 wherein the cover is composed of a flexible material.

- [c41] The armrest of claim 40 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.
- [c42] The armrest of claim 41 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c43] The armrest of claim 42 wherein the core is composed of a foam material.
- [c44] The armrest of claim 43 wherein the foam material is semi-rigid.
- [c45] The armrest of claim 44 wherein the impact force required to move the deflectable member is less than that required if the deflectable member were permanently mounted to the substrate.
- [c46] The armrest of claim 44 wherein the impact force required to move the deflectable member is less than that able to cause injury to a bodily region of an occupant that collides with the armrest.
- [c47] The armrest of claim 29 wherein the impact force deflects at least a portion of the core against the deflectable member to cause movement of the deflectable member.

[c48] The armrest of claim 29 wherein the retention of the deflectable member against the substrate is performed without separate fasteners.

[c49] The armrest of claim 29 and further comprising a moveable mounting adapted to permit movement of the deflectable member relative to the substrate upon receipt of a suitably large impact force to the armrest, wherein the retention of the deflectable member is performed by the moveable mounting.

[c50] The armrest of claim 49 wherein the moveable mounting comprises at least one pin on one of the substrate and the deflectable member received by at least one aperture on the other of the substrate and the deflectable member corresponding to each of the at least one pin on the one of the substrate and the deflectable member.

[c51] The armrest of claim 50 wherein the at least one pin is sheared off by the at least one corresponding aperture when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.

[c52] The armrest of claim 51 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.

[c53] The armrest of claim 49 wherein the movable mounting

comprises at least one edge on one of the deflectable member and the substrate received behind at least one ridge on the other of the deflectable member and the substrate corresponding to each of the at least one edge on the one of the deflectable member and the substrate.

- [c54] The armrest of claim 53 wherein the at least one edge cams over the at least one ridge when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.
- [c55] The armrest of claim 54 wherein the at least one edge has one of a semi-circular and triangular profile.
- [c56] The armrest of claim 29 wherein the impact force required to move the deflectable member is less than that required if the deflectable member were permanently mounted to the substrate.
- [c57] The armrest of claim 29 wherein the impact force required to move the deflectable member is less than that able to cause injury to a bodily region of an occupant that collides with the armrest.
- [c58] The armrest of claim 29 wherein the cover is composed of a flexible material.
- [c59] The armrest of claim 29 wherein the cover is composed

of one of a leather, a fabric, and a polymeric material.

- [c60] The armrest of claim 29 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c61] The armrest of claim 29 wherein the core is composed of a foam material.
- [c62] The armrest of claim 61 wherein the foam material is semi-rigid.
- [c63] A collapsible vehicular trim component for a passenger compartment of a vehicle comprising:
 - a substrate adapted to be fixedly mounted to a support panel on the vehicle;
 - a cover mounted over the substrate;
 - a core disposed between at least a portion of the substrate and the cover to provide cushioning to the component; and
 - a deflectable member retained against the substrate, wherein the deflectable member can overcome its retention against the substrate upon receipt of a suitably large impact force and move with respect to the substrate.
- [c64] The collapsible vehicular trim component of claim 63 and further comprising a recess adjacent to the sub-

strate, wherein the deflectable member can move into an area of the recess upon receipt of the impact force.

[c65] The collapsible vehicular trim component t of claim 64 wherein the impact force deflects at least a portion of the core against the deflectable member to cause movement of the deflectable member.

[c66] The collapsible vehicular trim component of claim 65 wherein the retention of the deflectable member against the substrate is performed without separate fasteners.

[c67] The collapsible vehicular trim component of claim 66 and further comprising a moveable mounting adapted to permit movement of the deflectable member relative to the substrate upon receipt of the impact force to the component, wherein the retention of the deflectable member is performed by the moveable mounting.

[c68] The collapsible vehicular trim component of claim 67 wherein the moveable mounting comprises at least one pin on one of the substrate and the deflectable member received by at least one aperture on the other of the substrate and the deflectable member corresponding to each of the at least one pin on the one of the substrate and the deflectable member.

[c69] The collapsible vehicular trim component of claim 68

wherein the at least one pin is sheared off by the at least one corresponding aperture when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.

[c70] The collapsible vehicular trim component of claim 69 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.

[c71] The collapsible vehicular trim component of claim 67 wherein the movable mounting comprises at least one edge on one of the deflectable member and the substrate received behind at least one ridge on the other of the deflectable member and the substrate corresponding to each of the at least one edge on the one of the deflectable member and the substrate.

[c72] The collapsible vehicular trim component of claim 71 wherein the at least one edge cams over the at least one ridge when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.

[c73] The collapsible vehicular trim component of claim 72 wherein the at least one edge has one of a semi-circular and triangular profile.

[c74] The collapsible vehicular trim component of claim 73

wherein the cover is composed of a flexible material.

- [c75] The collapsible vehicular trim component of claim 74 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.
- [c76] The collapsible vehicular trim component of claim 75 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c77] The collapsible vehicular trim component of claim 76 wherein the core is composed of a foam material.
- [c78] The collapsible vehicular trim component of claim 77 wherein the foam material is semi-rigid.
- [c79] The collapsible vehicular trim component of claim 78 wherein the impact force required to move the deflectable member is less than that required if the deflectable member were permanently mounted to the substrate.
- [c80] The collapsible vehicular trim component of claim 78 wherein the impact force required to move the deflectable member is less than that able to cause injury to a bodily region of an occupant that collides with the component.

[c81] The collapsible vehicular trim component of claim 63 wherein the impact force deflects at least a portion of the core against the deflectable member to cause movement of the deflectable member.

[c82] The collapsible vehicular trim component of claim 63 wherein the retention of the deflectable member against the substrate is performed without separate fasteners.

[c83] The collapsible vehicular trim component of claim 63 and further comprising a moveable mounting adapted to permit movement of the deflectable member relative to the substrate upon receipt of a suitably large impact force to the component, wherein the retention of the deflectable member is performed by the moveable mounting.

[c84] The collapsible vehicular trim component of claim 83 wherein the moveable mounting comprises at least one pin on one of the substrate and the deflectable member received by at least one aperture on the other of the substrate and the deflectable member corresponding to each of the at least one pin on the one of the substrate and the deflectable member.

[c85] The collapsible vehicular trim component of claim 84 wherein the at least one pin is sheared off by the at least

one corresponding aperture when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.

- [c86] The collapsible vehicular trim component of claim 85 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.
- [c87] The collapsible vehicular trim component of claim 83 wherein the movable mounting comprises at least one edge on one of the deflectable member and the substrate received behind at least one ridge on the other of the deflectable member and the substrate corresponding to each of the at least one edge on the one of the deflectable member and the substrate.
- [c88] The collapsible vehicular trim component of claim 87 wherein the at least one edge cams over the at least one ridge when the deflectable member overcomes its retention against the substrate upon receipt of the impact force.
- [c89] The collapsible vehicular trim component of claim 88 wherein the at least one edge has one of a semi-circular and triangular profile.
- [c90] The collapsible vehicular trim component of claim 63 wherein the impact force required to move the de-

flectable member is less than that required if the deflectable member were permanently mounted to the substrate.

- [c91] The collapsible vehicular trim component of claim 63 wherein the impact force required to move the deflectable member is less than that able to cause injury to a bodily region of an occupant that collides with the component.
- [c92] The collapsible vehicular trim component of claim 63 wherein the cover is composed of a flexible material.
- [c93] The collapsible vehicular trim component of claim 63 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.
- [c94] The collapsible vehicular trim component of claim 63 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c95] The collapsible vehicular trim component of claim 63 wherein the core is composed of a foam material.
- [c96] The collapsible vehicular trim component of claim 95 wherein the foam material is semi-rigid.
- [c97] A collapsible vehicular trim component for a vehicle pas-

senger compartment comprising:

a collapsible frame, wherein the collapsible frame is deflectable in at least one direction upon a forcible impact received by the component; and

a cover positioned over the collapsible frame.

[c98] The collapsible vehicular trim component of claim 97 and further comprising a recess located within the component adjacent to the collapsible frame, wherein the recess provides an area for deflection of the collapsible frame upon receipt of an impact force.

[c99] The collapsible vehicular trim component of claim 98 wherein the collapsible frame comprises:
a first frame member adapted to be mounted to a support member on the vehicle to mount the component to the support member; and
a second frame member mounted to the first frame member by a moveable mounting.

[c100] The collapsible vehicular trim component of claim 99 wherein the impact force required to move the second frame is less than that required if the second frame were permanently mounted to the first frame.

[c101] The collapsible vehicular trim component of claim 99 wherein the impact force required to move the second

frame is less than that able to cause injury to a bodily region of an occupant that collides with the component.

[c102] The collapsible vehicular trim component of claim 99 wherein the moveable mounting comprises a mounting adapted to permit movement of the second frame relative to the first frame upon receipt of the impact force to the component.

[c103] The collapsible vehicular trim component of claim 102 wherein the moveable mounting comprises at least one pin on one of the first frame and the second frame received by at least one aperture on the other of the first frame and the second frame corresponding to each of the at least one pin on the one of the first frame and the second frame.

[c104] The collapsible vehicular trim component of claim 103 wherein the at least one pin is sheared off by the at least one corresponding aperture during relative movement of the second frame with respect to the first frame.

[c105] The collapsible vehicular trim component of claim 104 wherein the at least one aperture has a frustoconical shape to assist in shearing off the at least one pin.

[c106] The collapsible vehicular trim component of claim 102 wherein the movable mounting comprises at least one

edge on one of the first frame and the second frame received behind at least one ridge on the other of the first frame and the second frame corresponding to each of the at least one edge on the one of the first frame and the second frame.

[c107] The collapsible vehicular trim component of claim 106 wherein the at least one edge cams over the at least one ridge during relative movement of the second frame with respect to the first frame.

[c108] The collapsible vehicular trim component of claim 107 wherein the at least one edge has one of a semi-circular and triangular profile.

[c109] The collapsible vehicular trim component of claim 102 and further comprising a core material located between the cover and the collapsible frame to provide a tactile feel for the component.

[c110] The collapsible vehicular trim component of claim 109 wherein the core is composed of a foam material.

[c111] The collapsible vehicular trim component of claim 110 wherein the foam material is semi-rigid.

[c112] The collapsible vehicular trim component of claim 111 wherein the cover is composed of a flexible material.

- [c113] The collapsible vehicular trim component of claim 112 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.
- [c114] The collapsible vehicular trim component of claim 113 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.
- [c115] The collapsible vehicular trim component of claim 114 wherein an impact force received against the cover deflects at least a portion of the core against the collapsible frame to cause deflection of the collapsible frame.
- [c116] The collapsible vehicular trim component of claim 115 wherein the impact force required to move the second frame is less than that required if the second frame were permanently mounted to the first frame.
- [c117] The collapsible vehicular trim component of claim 115 wherein the impact force required to move the second frame is less than that able to cause injury to a bodily region of an occupant that collides with the component.
- [c118] The collapsible vehicular trim component of claim 97 and further comprising a core material located between the cover and the collapsible frame to provide a tactile

feel for the component.

[c119] The collapsible vehicular trim component of claim 118 wherein the core is composed of a foam material.

[c120] The collapsible vehicular trim component of claim 119 wherein the foam material is semi-rigid.

[c121] The collapsible vehicular trim component of claim 118 wherein an impact force received against the cover deflects at least a portion of the core against the collapsible frame to cause deflection of the collapsible frame.

[c122] The collapsible vehicular trim component of claim 97 wherein the cover is composed of a flexible material.

[c123] The collapsible vehicular trim component of claim 97 wherein the cover is composed of one of a leather, a fabric, and a polymeric material.

[c124] The collapsible vehicular trim component of claim 97 wherein the cover provides an architectural finish and is composed of a material that matches the vehicle passenger compartment.